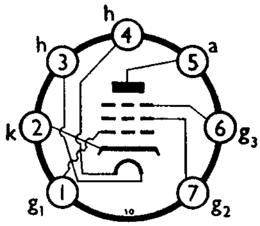
# MINIATURE
# VARIABLE-MU R.F. PENTODE
## 0·1A INDIRECTLY HEATED

**W107**

**OCTOBER, 1952**

## BASE CONNECTIONS AND VALVE DIMENSIONS




View from underside of base.

| | |
|---|---|
| Base : | B7G |
| Bulb : | Tubular |

| | | |
|---|---|---|
| Overall length : | 49—55 | mm. |
| Seated length : | 43—49 | mm. |
| Max. diameter : | 19 | mm. |

## RATING

| | | Pentode connection | Triode connection | |
|---|---|---|---|---|
| $I_h$ | | 0·1 | 0·1 | A |
| $V_h$ | | 12·6 approx. | 12·6 approx. | V |
| $I_k$ | | 12 max. | 12 max. | mA |
| $V_a$ | | 250 max. | 250† max. | V |
| $V_{g2}$ | | 250 max. | — | V |
| $p_a$ | | 2·5 max. | 3† max. | W |
| $p_{g2}$ | | 0·5 max. | — | W |
| $\mu$ | at $V_a = V_{g2} = 200$, $V_{g1} = -2{\cdot}5$ | — | 30 | |
| $r_a$ | | 500 | 10 | kΩ |
| $g_m$ | | 2·5 | 3 | mA/V |

† combined anode and screen grid rating.

## CAPACITANCES (of unscreened valve)

$c_{a\text{-}all}$ 7 pF $c_{g1\text{-}all}$ 4·2 pF $c_{a\text{-}g1}$ 0·006 pF

## TYPICAL OPERATION

**Class A Amplifier. Pentode Connection**

| | | |
|---|---|---|
| $V_a$ | 200 | V |
| $V_{g2}$ | 200 | V |
| $V_{g3}$ | 0 | V |
| $V_{g1}$ | −2·6 | V |
| $I_a$ | 8 | mA |
| $I_{g2}$ | 2 | mA |
| $R_k$ | 270 | Ω |

The effective external grid to cathode resistance should not exceed 4 MΩ.

## SCREENING

No internal or external screening is fitted to the valve.

## MOUNTING

Any position.

## MICROPHONY

Although this is of a very low order, equipment should be designed to minimise microphony.

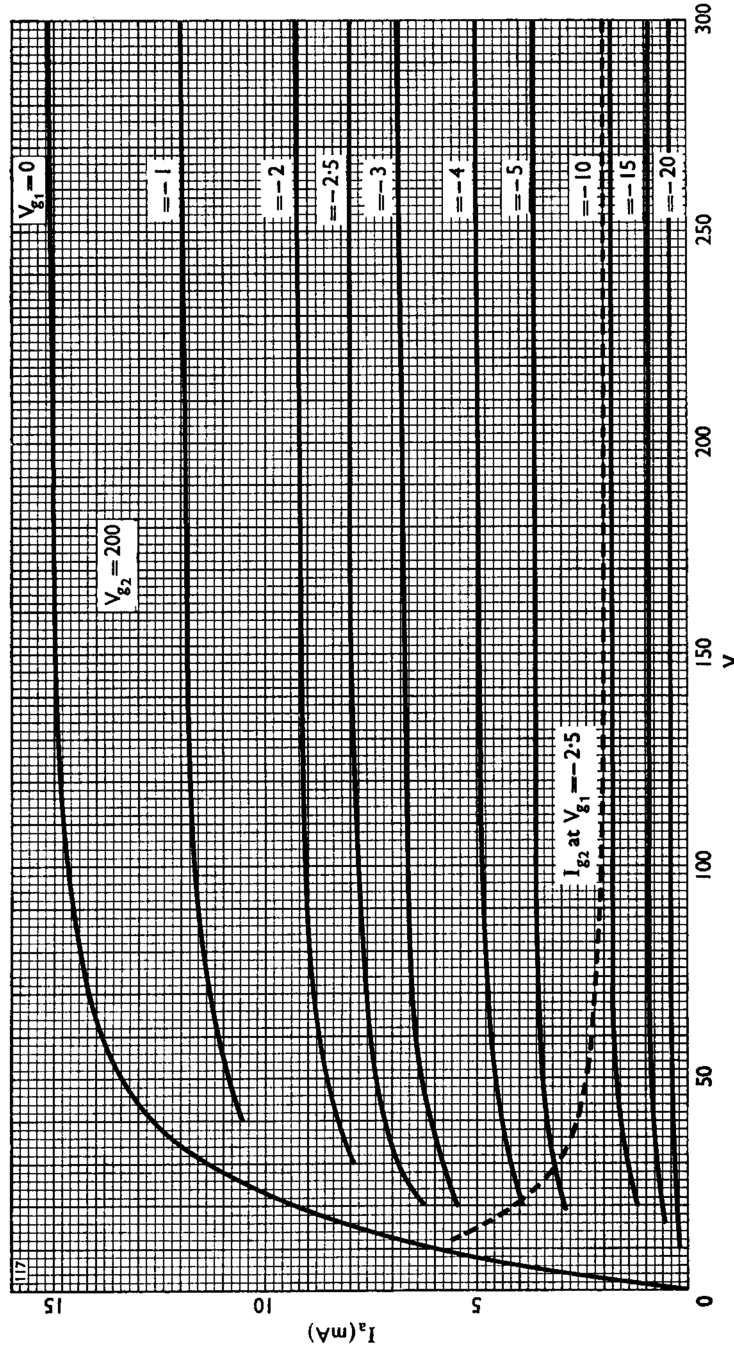
## VENTILATION

No special precautions.


MARCONI'S WIRELESS TELEGRAPH COMPANY LIMITED

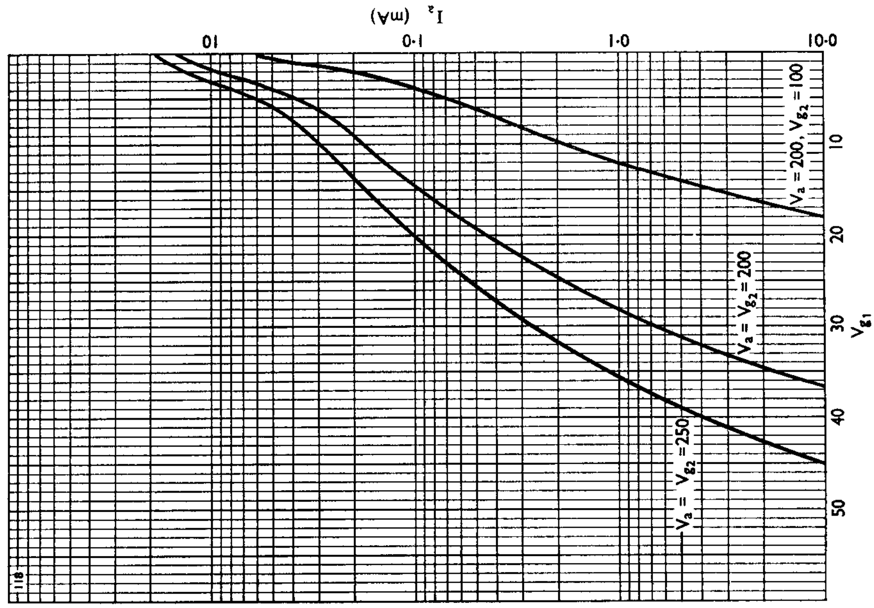
*Head Office : Marconi House, Chelmsford · Telephone : Chelmsford 3221 · Telegraphic Address : Expanse, Chelmsford*

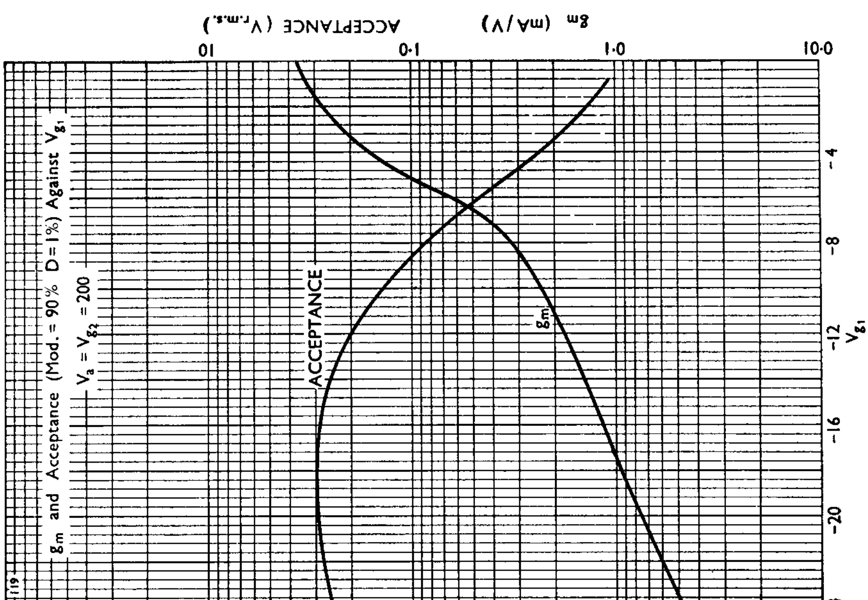
# W107



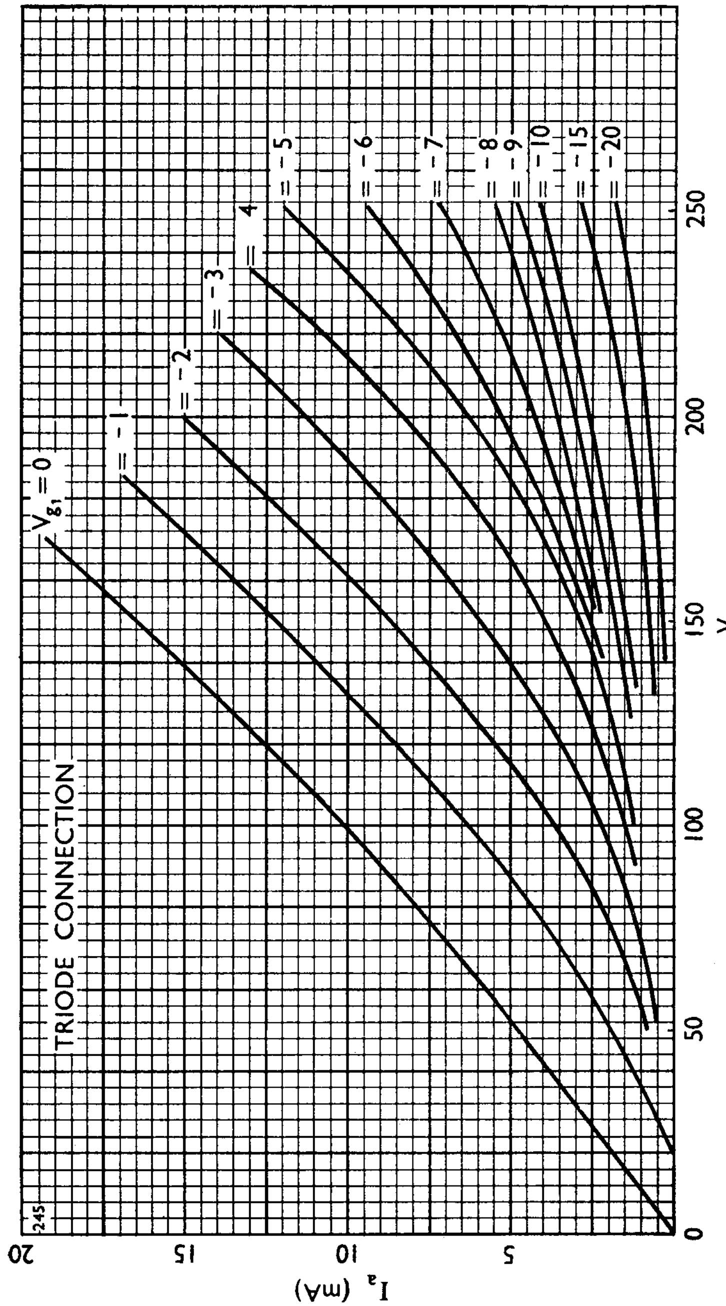
$V_{g1}=0$
=−1
=−2
=−2·5
=−3
=−4
=−5
=−10
=−15
=−20
$V_{g2}=200$
$I_{g2}$ at $V_{g1}=-2{\cdot}5$
$I_a$(mA)
$V_a$
0
5
10
15
50
100
150
200
250
300
117

# W107


$I_a$ (mA)
01
0·1
1·0
10·0
$V_a = 200, V_{g2} = 100$
$V_a = V_{g2} = 200$
$V_a = V_{g2} = 250$
10
20
30
40
50
$V_{g1}$
118


$g_m$ and Acceptance (Mod. = 90% D = 1%) Against $V_{g1}$
$V_a = V_{g2} = 200$
ACCEPTANCE ($V_{r.m.s.}$)
$g_m$ (mA/V)
01
0·1
1·0
10·0
ACCEPTANCE
$g_m$
-4
-8
-12
-16
-20
-24
$V_{g1}$
119

# W107


TRIODE CONNECTION
V_g1 = 0
= −1
= −2
= −3
= 4
= −5
= −6
= −7
= −8
= −9
= −10
= −15
= −20
0
50
100
150
200
250
V_a
20
15
10
5
I_a (mA)
245